

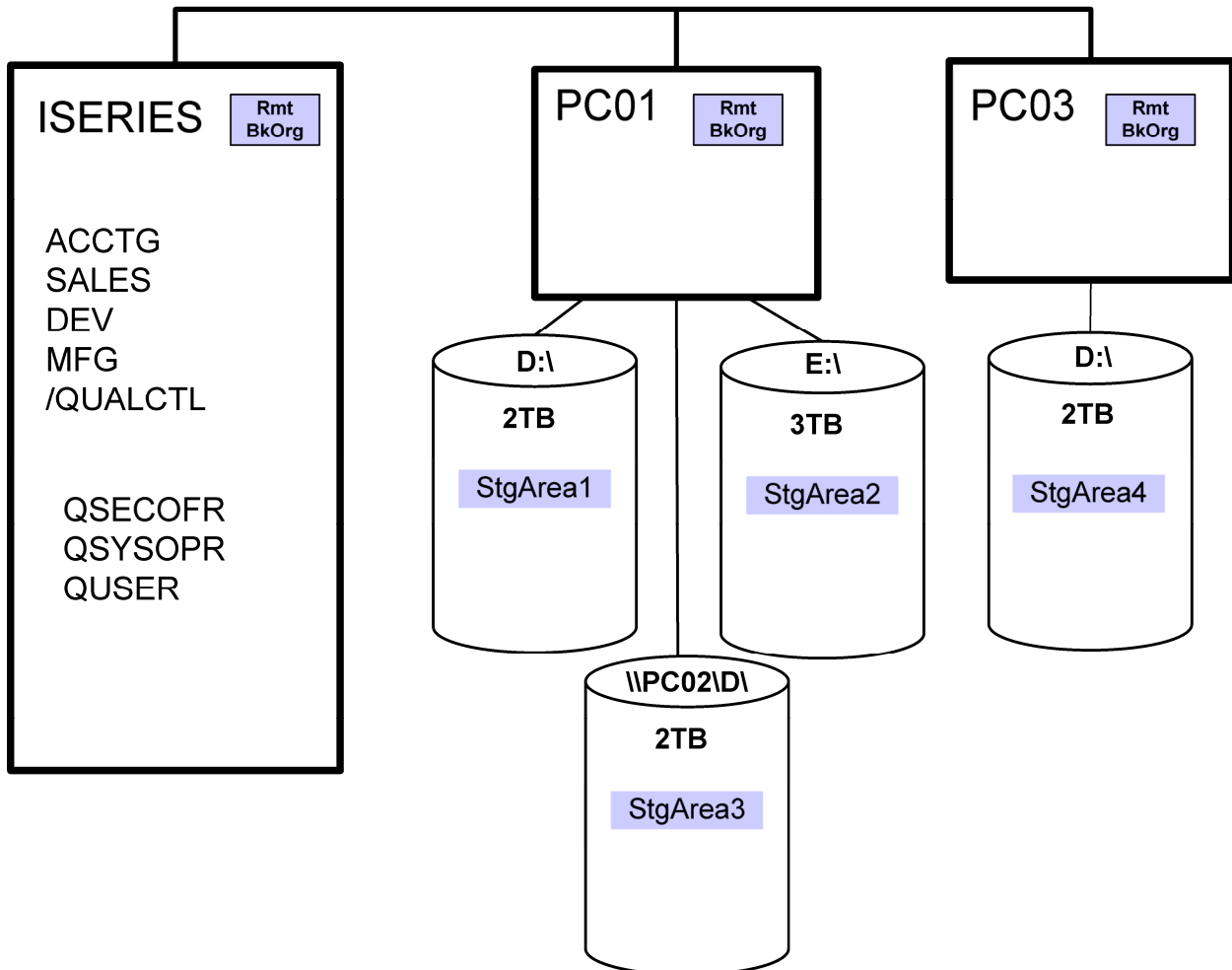
# APPENDIX B: BDS PERSONAL CLOUD EXAMPLE

The following example shows the steps needed to setup and save and restore objects to/from your BDS Personal Cloud. This example assumes Remote Backup Organizer has been installed on the iSeries and the Windows PC machines. Refer to Chapter 2, Installation and the Remote Backup Organizer for Windows Help for more information.

## *The Example System*

In this example the iSeries will save library and IFS objects to a BDS Personal Cloud. Remote Backup Organizer is installed on the iSeries and on 2 Windows servers.

## Example System



**Figure B-3-1: Example System**

In this example we have the following objectives:

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- Save libraries ACCTG, SALES, and MFG. Make a full save every month, and save changes nightly. Save the libraries to PC01, and spread the saves in areas across the 3 attached hard drives. Keep the backups for at least 3 months.
- Save library DEV nightly. Save the library to PC01, and spread the saves in areas across the 3 attached hard drives. Keep the last 10 backups.
- Save IFS directory /QUALCTL. Make a full save every month, and save changes nightly. Save the directory to PC01, and spread the saves in areas across the 3 attached hard drives.
- Save ACCTG, SALES, MFG. Make a full save every month to PC03. Keep at least 6 iterations of the backup.
- Save /QUALCTL. Make a full save every month to PC03. Keep at least 6 iterations of the backup.
- Encrypt data written to the PC hard drives. Encrypt transmissions between PC03 and the iSeries. There is no need to encrypt transmissions between PC01 and the iSeries.
- Allow only user profiles QSECOFR, QSYSOPR and QUSER access to the Remote Backup Organizer Backups.

## Perform the following steps on PC01:

**1) Check/Set Settings.** Click Start, BDS Remote Backup Organizer, Product Administration. Select Define Product-wide Settings. Write Down the following information:

Listen IP Address  
Listen Port Number  
Password

Make any changes if needed and press ENTER.

These values will be used later.

**2) Start/Restart the BDS Server.** Start a Control Panel session. Click Administrative Tools, Services. Click the BDS Remote Backup Organizer Server service. If you made any changes in the previous step, then click Restart if the service is running. Otherwise, click Start if the server is not running.

**Note:** The BDS Remote Backup Organizer Server service can also be started by Selecting Other Functions on the Product Administration display.

**3) Create Storage Areas and Groups.** Click Start, BDS Remote Backup Organizer, Product

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Administration. Select Define Local Storage Areas and Groups.

**a) Define Storage Areas.** Click File, New Storage Area. Name the Storage Area StgArea1 and Click OK. On the Storage Area Specification panel, enter the following:

Path Name: Click Browse. Locate and expand the D drive. Right-click on the D drive and click New, Folder. Name the folder StgArea1, make sure it is selected, and click OK.

Maximum Size: \*NOMAX

Description: Storage Area 1

Click Accept to create the Storage Area specification StgArea1.

Repeat the above steps for StgArea2, placing it on hard disk E: and StgArea3, placing it on [\\PC02\D](#). When complete exit back to the Storage Areas and Groups display, you should see the 3 Storage Areas in the upper portion of the screen.

**b) Define a Storage Group.** Click File, New Storage Area Group. Name the Storage Area Group StgGroup1 and Click OK. On the Storage Area Group Specification panel, enter a Description and then click File, New Storage Area. Click the Select button, then double-click StgArea1 in the list to select it. Click Accept to add StgArea1 to the list.

### Perform the following steps on PC03:

**1) Check/Set Settings.** Click Start, BDS Remote Backup Organizer, Product Administration. Select Define Product-wide Settings. Write Down the following information:

Listen IP Address  
Listen Port Number  
Password

Make any changes if needed and press ENTER.

These values will be used later.

**2) Start/Restart the BDS Server.** Start a Control Panel session. Click Administrative Tools, Services. Click the BDS Remote Backup Organizer Server service. If you made any changes in the previous step, then click Restart if the service is running. Otherwise, click Start if the server is not running.

**Note:** The BDS Remote Backup Organizer Server service can also be started by Selecting Other Functions on the Product Administration display.

**3) Create Storage Area.** Click Start, BDS Remote Backup Organizer, Product Administration.

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Select Define Local Storage Areas and Groups.

**a) Define Storage Areas.** Click File, New Storage Area. Name the Storage Area StgArea4 and Click OK. On the Storage Area Specification panel, enter the following:

Path Name: Click Browse. Locate and expand the D drive. Right-click on the D drive and click New, Folder. Name the folder StgArea1, make sure it is selected, and click OK.

Maximum Size: \*NOMAX

Description: Storage Area 4

Click Accept to create the Storage Area specification StgArea4.

## Perform the following steps on the iSeries:

**1) Access the Main Menu.** Add library BDSRMBK to your library list. This will save you from having to enter the library qualifier for each command:

**ADDLIBLE LIB(BDSRMBK)**

Run the Main Menu command:

**RBKADM** (Press ENTER)

**2) Set Tailoring Options.** Set and display product-wide values. Take option 1 (Tailoring Options) to show the Setup Display. Note and make changes to the following fields if desired:

System Name:	Note 1
Dft. Encr Password:	Note 2
Restore Dft Job Desc:	*INTER

**Note 1:** The System Name entered on this screen must match the Remote System's Security System Name/User entry (see below). The System Name entered on this screen does not need to match the Network Attribute (DSPNETA) though it is recommended.

**Note 2:** Since one of the objectives is to encrypt all save data written to disk, you should specify a password here. Please note that the password is only used internally, users will not be asked this password. Also note users will not be asked for this password, and changing the password will not affect previously written data, it will still be accessible. You should specify a strong password. Save commands can override this setting if desired.

**2) Create Remote System Specifications.** Take option 2 (Manage Remote System Specifications) and then press ENTER to show all Remote Systems. Press F6 to add a specification. Enter the following and press **ENTER**:

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Remote System Name: PC01

The Define Remote System screen will appear. Enter the following (Refer to the values for PC01 recorded above):

<u>Field</u>	<u>Value</u>	or	<u>PC Field</u>
Active:	A		
Host Name:			Listen IP Address (see note)
Server Password:			Password
Port Number:			Listen Port Number
Encrypt Comm Data:	N		
Descriptive Text:	PC01		

**Note:** If the Listen Port IP Address field on the PC is not blank, you must specify that IP address on this Remote System Spec. If it is not blank, you can specify any IP address or Host Name associated with this PC.

Press **ENTER** to save the specification.

Enter the following and press **ENTER**:

Remote System Name: PC03

The Define Remote System screen will appear. Enter the following (Refer to the values for PC03 recorded above):

<u>Field</u>	<u>Value</u>	or	<u>PC Field</u>
Active:	A		
Host Name:			Listen IP Address (see note)
Server Password:			Password
Port Number:			Listen Port Number
Encrypt Comm Data:	Y		
Descriptive Text:	PC03		

**Note:** If the Listen Port IP Address field on the PC is not blank, you must specify that IP address on this Remote System Spec. If it is not blank, you can specify any IP address or Host Name associated with this PC.

Press **ENTER** to save the specification.

Press **F3** to end the add session. You should now see PC01 and PC03 in the list of Remote Systems. Press **F3** to return to the menu.

**3) Create Backup Specifications.** Take option 3 (Manage Backup Specifications) and then press **ENTER** to show all Backup Specifications. Press **F6** to add a specification.

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**a) Libraries ACCTG, SALES, and MFG to PC01:** Name the specification PRD\_IC (Production Libraries, Init/Chgs) and press **ENTER**. Enter the following:

Active:	A
Backup Type:	G
Storage Area Type/Name:	G StgGroup1
Retention Type/Value:	NM 3
Disk Encr Passwr:	*DFT
Descriptive Text:	Save ACCTG, SALES, MFG to PC01

Press **ENTER**. On the Libraries to Save screen, enter the following:

ACCTG  
SALES  
MFG

Press F6 to save the specification.

**b) Library DEV to PC01:** Name the specification DEV (Development Library) and press **ENTER**. Enter the following:

Active:	A
Backup Type:	F
Storage Area Type/Name:	G StgGroup1
Retention Type/Value:	NI 10
Disk Encr Passwr:	*DFT
Descriptive Text:	Save DEV to PC01

Press **ENTER**. On the Libraries to Save screen, enter the following:

DEV

Press F6 to save the specification.

**c) IFS /QUALCTL to PC01:** Name the specification QUALC and press **ENTER**. Enter the following:

Active:	A
Backup Type:	F
Storage Area Type/Name:	G StgGroup1
Retention Type/Value:	NI 10
Disk Encr Passwr:	*DFT
Descriptive Text:	Save /QUALCTL to PC01

Press **ENTER**. On the Libraries to Save screen, enter the following:

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\*NONE

Press F6 to save the specification.

**d) Libraries to PC03:** Name the specification LIB\_PC03 and press **ENTER**. Enter the following:

Active:	A
Backup Type:	F
Storage Area Type/Name:	A StgArea4
Retention Type/Value:	NI 6
Disk Encr Passwr:	*DFT
Descriptive Text:	Save ACCTG, SALES, MFG, and DEV to PC03

Press **ENTER**. On the Libraries to Save screen, enter the following:

ACCTG  
SALES  
MFG  
DEV

Press F6 to save the specification.

**e) IFS /QUALCTL to PC03:** Name the specification QC\_PC03 and press **ENTER**. Enter the following:

Active:	A
Backup Type:	F
Storage Area Type/Name:	A StgArea4
Retention Type/Value:	NI 6
Disk Encr Passwr:	*DFT
Descriptive Text:	Save /QUALCTL to PC03

Press Enter. On the Libraries to Save screen, enter the following:

\*NONE

Press F6 to save the specification.

**3) Set Security.** As shipped, all users can run all Remote Backup Organizer commands. All users can access Backups on all Remote Systems. One of the stated objectives is to allow only certain users access to Remote Backup Organizer commands. To limit users' ability to access commands or Backups, perform the following:

**a) PC01 and PC03.** On both PC01 and PC03, click Start, BDS Remote Backup Organizer, Product

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Administration. Select Define Users. If an entry \*ANY/\*ANY exists, right-click on it and remove it. Click File, New User. Use the System Name specified on the iSeries Tailoring Options screen above to add the following iSeries user profiles:

```
QSECOFR
QSYSOPR
QUSER
```

**b) iSeries.** Sign on as QSECOFR and run the following iSeries Security commands for each of the following commands in library BDSRMBK:

## Commands:

```
SAV*
RST*
DSP*
WRKCLDBAK
```

## iSeries Security commands:

```
RVKOBJAUT OBJ(BDSRMBK/xxx) OBJTYPE(*CMD) USER(*PUBLIC)
GRTOBJAUT OBJ(BDSRMBK/xxx) OBJTYPE(*CMD) USER(QSYSOPR QUSER)
```

**Note:** User profile QSECOFR owns the objects, and already has all authority.

The administrator can also use an iSeries Authorization List to manage object security if desired.

**4) Enter the Save commands.** The following commands can be run from a command line, placed into CL programs, placed into menu programs, or inserted into job scheduling applications.

## First day of each month:

```
SAVLIBCLD BACKSPEC(PRD_IC)
SAVLIBCLD BACKSPEC(DEV)
SAVCLD BACKSPEC(QUALC) OBJ('/QUALCTL') CHGPERIOD(*ALL)
SAVLIBCLD BACKSPEC(LIB_PC03)
SAVLIBCLD BACKSPEC(QC_PC03)
```

## Other Days:

```
SAVCHOBCLD BACKSPEC(PRD_IC) OBJ(*ALL)
SAVLIBCLD BACKSPEC(DEV)
SAVCLD BACKSPEC(QUALC) OBJ('/QUALCTL') CHGPERIOD(*LASTSAVE)
```

It is recommended to look over the job log after running any save or restore operation to verify the desired



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objects were saved successfully.

**Note:** You should attempt to perform/simulate as many of the above save operations as possible so that you have data for the steps that follow.

**5) Display/Restore saved Objects.** After running save commands, you can display the backups contained on the remote systems.

**a) Run the Display Cmd.** Enter the **WRKCLDBAK** (Work w/Cloud Backups) command and press ENTER (or select the command off of the menu). Press enter to show all Remote Systems. The Work with Remote Backups screen will appear, showing the defined remote systems (PC01 and PC03). Select PC01 or PC03 and take option 8 to display its defined attributes. Press ENTER to return to the list. Press the following function keys and note their function:

F5	Refresh
F6/F7/F8/F8	IBM displays
F10/F11	View +/-
F18	Display Specifications
F19	Session Settings

Note that you can press F1 (and then F2) to show help information relevant to the data at your current cursor position.

**6) Retrieve Backups.** Select PC01 and take option 5 to retrieve and display its Backups. A list of the Backups is shown. Note the backups can be one of the following types:

- G (Group) – Group Backups have an Initial Backup and zero or more Changes Backups
- F (Full) – Full Backups are separate, standalone Backups

The options work slightly different depending on the Backup Type, for example, taking option 5 (display) for a Group shows the Backups contained in the group, where for a Full shows a list of the libraries/objects within the saved Backup.

**a) Delete Backups/Groups.** Press Take option 4 (delete) next to one or more Backups and press ENTER. A list of pending Backups to delete is shown. For now, press **F12** to return without deleting.

**b) Display/Change Backup Attributes.** Select a backup and take option 2 (Change) or option 8 (Display) and press ENTER. The backup's attributes is shown. For now, press **F12** to return without changing.

**Note:** Changes are made on the Remote System. You will have to refresh your session (F5) to see the changes.

**Note:** To change a Group Backup's attributes, take option 5 (display list) and then take option 2 to change the Initial Backup in the list.

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**c) Restore.** Select a backup and take option 6 (Restore) and press **ENTER**. The Restore a Backup or Backup Group screen is shown. Note the options and press **ENTER**. A second screen showing additional, save-command-specific options is shown. For now, press **F3** to return without restoring.

**Note:** For a Group Backup, you can take option 6 (restore) to restore all Backups in the Group, or you can select option 5 (list) and then take option 6 (restore) to restore individual Backups in the Group. Depending on the screen where 6 (restore) is selected, you can restore all of the backups in a Group, a single Backup in a Group, a single Full (stand-alone) Backup, a single library within a Backup containing multiple libraries, or one or more objects.

**7) Display Objects.** Take option 5 (display) next to one of the Backups. If the Backup is a Group, select one of the Backups in the list and take option 5 (List Objs). If a list of libraries is shown take option 5 (Dsp Entries) next to one of the libraries.

The BDS Object Display screen should appear, showing a list of saved objects. Note the available options and command keys.

**a) Display the File Header.** Press F16 to show the Display Save Header screen. Certain attributes of the Backup are shown. Press **ENTER** to return.

**b) Display Search Specs.** Press F18 to show the Change Object Display Specifications screen. From here you can narrow down the list of objects displayed by showing only a certain object name or type. Press **ENTER** or press **F12** to return.

**c) Display IBM Info.** Press F6, F7, or F8 to show the IBM messages, job log or submitted jobs. Press **F12** to return.

**d) Display Object Attributes.** Select option 8 to display the Object Attributes screen. Certain attributes of the object are shown. Press **F12** to return.

**e) Display Object Subentries.** If your list of objects contains an outq or a database file (physical or logical), you can display its spool entries or members. Select option 5 to display the entries or members screen. Press **F12** to return.

**f) Restore Objects.** If Select option 6 (restore) for one or more objects and press **ENTER**. The Restore Objects screen appears. Enter the following:

**Job Description:**        \*INTER  
**Prompt SBMJOB:**        N

Press **ENTER**. The Restore Objects screen will appear. Enter the following:

**Restore to library (RSTLIB):** QTEMP

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Enter other parameters if desired then press **ENTER**. When the restore operation is finished, the BDS Object Display screen will appear. Press F7 to display the job log and verify the operation completed successfully. Press F12 to return and press F12 to return to the command line.